

What is claimed is:

- 1     1.     An apparatus comprising a plurality of low pass filters coupled to a common  
2     mode rejection amplifier to produce a band pass amplifier response.
- 1     2.     The apparatus of claim 1 wherein the plurality of low pass filters includes a  
2     first low pass filter having a first corner frequency, and a second low pass filter  
3     having a second corner frequency, and wherein the band pass amplifier response is  
4     substantially between the first corner frequency and the second corner frequency.
- 1     3.     The apparatus of claim 1 wherein at least one of the plurality of low pass  
2     filters comprises a programmable low pass filter.
- 1     4.     The apparatus of claim 3 wherein the common mode rejection amplifier  
2     comprises a differential amplifier.
- 1     5.     The apparatus of claim 4 wherein the differential amplifier includes two  
2     parallel-coupled differential input stages coupled to the plurality of low pass filters.
- 1     6.     The apparatus of claim 1 further comprising an input stage having first and  
2     second differential outputs, wherein the plurality of low pass filters comprises first  
3     and second low pass filters coupled to the first differential output, and third and  
4     fourth low pass filters coupled to the second differential output.
- 1     7.     The apparatus of claim 6 wherein:  
2         the first and third low pass filters have substantially the same corner  
3     frequency; and  
4         the second and fourth low pass filters have substantially the same corner  
5     frequency.

1     8.     An apparatus comprising:  
2             first and second differential input nodes;  
3             first and second low pass filters coupled to the first differential input node;  
4             third and fourth low pass filters coupled to the second differential input  
5     node; and  
6             a differential amplifier with two parallel input stages coupled to the first,  
7     second, third, and fourth low pass filters.

1     9.     The apparatus of claim 8 wherein at least one of the first, second, third, and  
2     fourth low pass filters has a programmable response.

1     10.    The apparatus of claim 8 further comprising an automatic gain control  
2     circuit having a transistor to shunt a pair of differential output nodes from the  
3     differential amplifier.

1     11.    The apparatus of claim 10 wherein the automatic gain control is coupled to  
2     sense a voltage on the first and second differential input nodes.

1     12.    The apparatus of claim 10 wherein the automatic gain control is coupled to  
2     sense a voltage on the differential output nodes of the differential amplifier.

1     13.    The apparatus of claim 8 further comprising an input amplifier coupled to  
2     receive an input signal and to drive the first and second differential input nodes.

1     14.    The apparatus of claim 13 wherein the first and third low pass filters exhibit  
2     a corner frequency corresponding to a first corner frequency of a band pass  
3     response, and the second and fourth low pass filters exhibit a corner frequency  
4     corresponding to a second corner frequency of the band pass response.

1     15.    An apparatus comprising:

2 a first amplifier;  
3 a second amplifier having common mode rejection; and  
4 a plurality of low pass filters coupled between the first and second amplifiers  
5 to set a band pass response by presenting unwanted frequency components in  
6 common mode to the second amplifier.

1 16. The apparatus of claim 15 wherein the plurality of low pass filters  
2 comprises:  
3 first and second low pass filters coupled to a first differential output node of  
4 the first amplifier; and  
5 third and fourth low pass filters coupled to a second differential output node  
6 of the first amplifier.

1 17. The apparatus of claim 16 wherein the second amplifier comprises:  
2 a first differential input stage coupled to the first and third low pass filters;  
3 and  
4 a second differential input stage in parallel with the first differential input  
5 stage, the second differential input stage coupled to the second and fourth low pass  
6 filters.

1 18. The apparatus of claim 17 wherein:  
2 the first and third low pass filters exhibit a corner frequency corresponding  
3 to a first corner frequency of the band pass response; and  
4 the second and fourth low pass filters exhibit a corner frequency  
5 corresponding to a second corner frequency of the band pass response.

1 19. The apparatus of claim 18 wherein the first, second, third, and fourth low  
2 pass filters are programmable.

1 20. An electronic system comprising:

2 an omni-directional antenna; and  
3 a sliding band pass amplifier having an input coupled to the omni-directional  
4 antenna, the sliding band pass amplifier including a plurality of low pass filters and  
5 a differential amplifier coupled together to produce a band pass response having  
6 corner frequencies related to corner frequencies of the plurality of low pass filters.

1 21. The electronic system of claim 20 wherein at least one of the plurality of low  
2 pass filters is programmable.

1 22. The electronic system of claim 21 further comprising a processor to  
2 influence operation of the at least one programmable low pass filter.

3  
4 23. The electronic system of claim 21 further comprising:  
5 a mixer coupled to an output of the sliding band pass amplifier; and  
6 a local oscillator to drive the mixer.

1 24. The electronic system of claim 23 further comprising a processor to  
2 influence operation of the local oscillator and the at least one programmable low  
3 pass filter.

1 25. The electronic system of claim 20 wherein the differential amplifier  
2 comprises two parallel differential input stages.

1 26. A method comprising:  
2 setting a local oscillator; and  
3 setting corner frequencies of low pass filters coupled to a differential  
4 amplifier to set a band pass response of the differential amplifier.

1 27. The method of claim 26 wherein setting corner frequencies sets frequencies  
2 to be rejected in a common mode of the differential amplifier.

1    28.    The method of claim 26 wherein setting corner frequencies sets frequencies  
2    to be amplified in a differential mode of the differential amplifier.